

Knittel, Janette

From: Zelelow, Biniam <bzelelow@kingcounty.gov>
Sent: Wednesday, April 29, 2020 9:58 AM
To: Long, John
Cc: Young, William; Joanna Fortenberry; Shane Delacruz; Knittel, Janette; Girard, Arnaud
Subject: RE: SUBJECT: Equipment Failure at Container Properties L.L.C.

Hi John,

I read this email when you first sent it but before I could reply, it fell through the cracks. I remembered this now when I was reviewing the March monitoring report. I appreciate your detailed explanation of the cause of the flow exceedances, how it was discovered, and the corrective actions taken. No further action is needed at this time. We would have sent you a notice on this asking for the explanation but you have provided an excellent report and thus, I will close this out.

Sincerely,
Biniam

From: Long, John <john.long3@woodplc.com>
Sent: Thursday, March 26, 2020 11:38 AM
To: Zelelow, Biniam <bzelelow@kingcounty.gov>
Cc: Young, William <william.young2@woodplc.com>; Joanna Fortenberry <Joanna.Fortenberry@TukwilaWA.gov>; Shane Delacruz <shaned@davispropertiesllc.com>; Knittel, Janette <Knittel.Janette@epa.gov>
Subject: SUBJECT: Equipment Failure at Container Properties L.L.C.

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Mr. Zelelow:

Wood is operating a groundwater extraction and pretreatment system for Container Properties under Permit No. 4167-03. This system is used to maintain an inward hydraulic gradient at the Former Rhone Poulenc site in Tukwila, Washington at 9229 East Marginal Way South. The system first began operation in mid-2003 and has been operating for the past 17 years. The groundwater extraction system is located inside a sub-surface low permeability barrier wall and is activated when the average water level measured outside the barrier wall approaches the average water level inside the barrier wall.

The site is adjacent to the Duwamish Waterway which is tidally influenced. The system uses a set of two water level transducers in conjunction with a programmable-logic controller to determine when the groundwater pumps need to be activated based on a 72-hour moving average of the groundwater levels inside and outside of the barrier wall. The system is typically operated under automatic control as the water levels in the waterway rise and fall due to tides, local rainfall, and releases from the Howard Hansen dam upstream on the Green River. Under normal operation, the system typically pumps less than 25,000 gallons-per-day (gpd) and typically only one pump is activated. If operation of one pump is not enough to maintain a large enough hydraulic gradient, a second and then third pump is activated automatically. The use of multiple pumps is rarely necessary and only occurred once between 2009 to 2019. Under typical operating conditions, the pumps are only be activated around a third of the time in any given month.

On March 18, 2020 during a routine check of the pretreatment system, we noticed that all three pumps had been activated for several days running which is not typical for this system. When all three pumps are running continuously

for 24 hours it is possible to exceed the daily permit limit of 25,000 gpd. Upon noticing that all three pumps were running, we immediately turned off the pretreatment system.

Further inspection of the system revealed that the water level transducer inside the barrier wall had failed, reporting erroneous water levels that caused the groundwater pretreatment system to activate all three groundwater extraction pumps. The table below summarizes the total discharge from the system during March 2020. We exceeded the permit limit of 25,000 gpd on 7 days in March before discovering the water level transducer had failed.

Date	Flow (gal)
3/1/2020	7300
3/2/2020	0
3/3/2020	16200
3/4/2020	14000
3/5/2020	18300
3/6/2020	18100
3/7/2020	18200
3/8/2020	18500
3/9/2020	25000
3/10/2020	38300
3/11/2020	49000
3/12/2020	48600
3/13/2020	43900
3/14/2020	25800
3/15/2020	21100
3/16/2020	45400
3/17/2020	43800
3/18/2020	15300
3/19/2020	0
3/20/2020	0
3/21/2020	0
3/22/2020	0
3/23/2020	0

We have replaced the failed transducer with a newer model. These transducers used at the site were expected to last 10 to 20 years, so the failure after 17 years is in line with these projections. The new transducer is operational, and the system was re-set to automatic operation on April 23, 2020. We are also double checking the alarm settings which should have alerted us when the transducer failed.

Now that the water level transducer has been replaced, we do not expect to exceed the 25,000 gpd permit limit. Please let me know if you have any further questions about our operations or our response to the equipment failure.

Sincerely - John

John D. Long, LG., L.Hg.
Senior Associate Hydrogeologist
600 University Street, Ste 600
Seattle, Washington, 98101

D +1 (206) 342-1779
F +1 (206) 342-1761
M +1 (206) 713-9499
E john.long3@woodplc.com



This message is the property of John Wood Group PLC and/or its subsidiaries and/or affiliates and is intended only for the named recipient(s). Its contents (including any attachments) may be confidential, legally privileged or otherwise protected from disclosure by law. Unauthorized use, copying, distribution or disclosure of any of it may be unlawful and is strictly prohibited. We assume no responsibility to persons other than the intended named recipient(s) and do not accept liability for any errors or omissions which are a result of email transmission. If you have received this message in error, please notify us immediately by reply email to the sender and confirm that the original message and any attachments and copies have been destroyed and deleted from your system.

If you do not wish to receive future unsolicited commercial electronic messages from us, please forward this email to: unsubscribe@woodplc.com and include "Unsubscribe" in the subject line. If applicable, you will continue to receive invoices, project communications and similar factual, non-commercial electronic communications.

Please click <http://www.woodplc.com/email-disclaimer> for notices and company information in relation to emails originating in the UK, Italy or France.

As a recipient of an email from a John Wood Group Plc company, your contact information will be on our systems and we may hold other personal data about you such as identification information, CVs, financial information and information contained in correspondence. For more information on our privacy practices and your data protection rights, please see our privacy notice at <https://www.woodplc.com/policies/privacy-notice>
